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Updated July 2025

Bachelor of MECHANICAL ENGINEERING (MCE)

4-Year Recommended Course Sequence with *Calculus Entry*

Click on the Course Name to access the course in the Undergraduate Catalog 24-25

Fall Semester 1	Spring Semester 2	Fall Semester 3	Spring Semester 4	Fall Semester 5	Spring Semester 6	Fall Semester 7	Spring Semester 8
☆ INQ 170 [3] Inquiry Launch to Engineering	MCE 181 [2] CAE Lab II (MCE 180)	ESC 201 [3] Statics (PHY 241)	ESC 202 [3] Dynamics (ESC 201)	ESC 321 [3] Thermodynamics (MTH 182)	MCE 315 [3] Electrical Systems (ESC 152, ESC 250 or MTH 286 , PHY 242)	MCE 450 [2] Design Project I (*MCE 365)	MCE 451 [3] Design Project II (MCE 450)
MTH 181 [4] Calculus I	ESC 152 [3] Programming with MATLAB	MCE 276 [3] Materials & Manufacturing Processes (MCE 181, *MCE 286)	ESC 301 [3] Fluid Mechanics (ESC 250 or MTH 286)	MCE 260 [3] Kinematics (MTH 281, ESC 152)	MCE 365 [3] Machine Design I (MCE 362)	C MCE 441 [3] or MCE 541 [4] Intro to Linear Controls Systems (ESC 350 or MTH 288, MCE 371)	American Civic Literacy Elective [3]
MCE 180 [2] CAE Lab I	PHY 241 [5] Physics I (MTH 181)	MCE 286 [1] Manufacturing Processes Lab (*MCE 276)	ESC 211 [3] Strength of Materials (ESC 201)	MCE 371 [3] Vibrations (ESC 202, ESC 250 or MTH 286)	MCE 324 [3] Intro to Heat Transfer (ESC 301, ESC 321)	MCE 470 [3] Engr. Measurements (ESC 211, MCE 315, MCE 324, MCE 371, *MCE 480)	Complexities of Pluralistic Society Elective [3]
CHM 261 [3] Gen. Chem. I CHM 266 [1] Gen. Chem. I Lab	ENG 108 [3] AI & Writing (Preferred) (ENG 101) OR ENG 102 [3] College Writing II (ENG 101)	**ESC 130 [1] Engineering & CS Career Prep	PHY 242 [5] Physics II (PHY 241, MTH 182)	MCE 362 [3] Machine Analysis (ESC 211, MCE 276)	C MCE 421 [3] or MCE 521 [4] Applied Thermodynamics (ESC 321, *MCE 481)	MCE 480 [1] Engineering Measurements Lab (*MCE 470)	PHL 215 [3] Technology Ethics HCC Elective
ENG 100 [3] Intensive Writing or ENG 101 [3] College Writing I	MTH 182 [4] Calculus II (MTH 181)	ESC 250 [3] Diff EQ for Eng. (MTH 182) OR MTH 286 [3] Intro. to Diff EQ (MTH 182- C or better)	Society and Human Behavior Elective [3]	ESC 350 [3] Linear Algebra for Engineers (MTH 182, ESC 152) OR MTH 288 [3] Linear Algebra (MTH 182- C or Better)	MCE 481 [1] Thermodynamics Lab (*MCE 421)	C **MCE Lab [3 or 4] 400-500 Level Courses	C **MCE Elective [3 or 4] 400-500 Level Courses
		MTH 281 [4] Multivariable Calculus (MTH 182- C or better)			Global Human Perspectives Elective [3]	ESC 282 [3] Engineering Economy (MTH 182)	C **MCE Elective [3 or 4] 400-500 Level Courses
16 Total Credit Hours	17 Total Credit Hours	14 or 15 Total Credit Hours	17 Total Credit Hours	15 Total Credit Hours	16 Total Credit Hours	15 Total Credit Hours	18 Total Credit Hours

Total Credits for MCE Degree: 128 or 129 (Including ESC 130)**

(Prerequisites) • (*Pre/co-requisite) • [# of Course Credits] • MCE XXX = Only Offered That Fall/Spring Semester

- Required MCE Courses **ESC 130 is highly recommended, yet optional.
- Required Science Courses
- Required English Courses
- Required Writing Across the Curriculum (WAC) Courses
- Required MCE Electives **3 semesters of co-op can replace 1 elective
- Required Math Courses
- Core Curriculum Electives

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C 500-level courses that satisfy Undergraduate and Master's degree credits

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↓ Scroll Down to View the Precalculus Entry 4-Year Plan Degree Chart ↓

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4-Year Recommended Course Sequence with *Precalculus Entry*

Click on the Course Name to access the course in the Undergraduate Catalog 24-25

Fall Semester 1	Spring Semester 2	Summer Semester #1	Fall Semester 3	Spring Semester 4	Summer Semester #2	Fall Semester 5	Spring Semester 6	Summer Semester #3	Fall Semester7	Spring Semester 8
☆ INQ 170 [3] Inquiry Launch to Engineering	MCE 181 [2] CAE Lab II (MCE 180)		ESC 152 [3] Programming with MATLAB (MTH 168 or Equivalent)	ESC 201 [3] Statics (PHY 241)		MCE 371 [3] Vibrations (ESC 202, ESC 250 or MTH 286)	MCE 315 [3] Electrical Systems (ESC 152, ESC 250 or MTH 286, PHY 242)		MCE 450 [2] Design Project I (*MCE 365)	MCE 451 [3] Design Project II (MCE 450)
Society and Human Behavior Elective [3]	Global Human Perspectives Elective [3]		PHY 241 [5] Physics I (MTH 181)	PHY 242 [5] Physics II (MTH 182, PHY 241)	MTH 288 [3] Linear Algebra (MTH 182- C or better) or ESC 350 [3] Linear Algebra for Engineers (MTH 182, ESC 152)	ESC 321 [3] Thermodynamics (MTH 182)	MCE 324 [3] Intro to Heat Transfer (ESC 301, ESC 321)		MCE 441 [3] or MCE 541 [4] Intro to Linear Controls (ESC 350 or MTH 288, MCE 371)	MCE 470 [3] Eng. Measurements (MCE 315, MCE 324, MCE 371)
ENG 100 [3] Intensive Writing or ENG 101 [3] College Writing I	ENG 108 [3] AI & Writing (Preferred) (ENG 101) OR ENG 102 [3] College Writing II (ENG 101)	OPSTEM MTH 180 SUMMER CALC I [4] (Avg B- or better in MTH 167 & 168)	MTH 182 [4] Calculus II (MTH 181- C or better)	MTH 281 [4] Multivariable Calculus (MTH 182- C or better)		MCE 260 [3] Kinematics (MTH 281, ESC 152)	MCE 362 [3] Machine Analysis (ESC 211, MCE 181, MCE 276)	CHM 261 [3] Gen. Chem. I CHM 266 [1] Gen. Chem I Lab (MTH 168)	MCE 365 [3] Machine Design I (MCE 362)	MCE 480 [1] Eng. Measurements Lab (*MCE 470)
MTH 165 [3] Intensive Precalc I OR MTH 167 [3] Precalculus I	MTH 168 [3] Precalculus II (MTH 165 or MTH 167- C or better)		MCE 276 [3] Materials & Manufacturing Processes (MCE 181, *MCE 286)	ESC 250 [3] Diff EQ for Eng. (MTH 182) OR MTH 286 [3] Intro. to Diff EQ (MTH 182- C or better)	ESC 202 [3] Dynamics (ESC 201)	ESC 211 [3] Strength of Materials (ESC 201)	MCE 421 [3] or MCE 521 [4] Applied Thermodynamics (ESC 321, *MCE 481)		**MCE Lab [3 or 4] 400-500 Level Courses	ESC 282 [3] Engineering Economy (MTH 182)
MCE 180 [2] CAE Lab I	American Civic Literacy Elective [3]		MCE 286 [1] Materials & Man. Processes Lab (*MCE 276)			ESC 301 [3] Fluid Mechanics (ESC 250 or MTH 286)	MCE 481 [1] Thermodynamics Lab (*MCE 421)		**MCE Elective [3 or 4] 400-500 Level Courses	**MCE Elective [3 or 4] 400-500 Level Courses
			**ESC 130 [1] Engineering Co-op Orientation				PHL 215 [3] Technology Ethics HCC Elective			Complexities of Pluralistic Society Elective [3]
14 Total Credit Hours	14 Total Credit Hours	4 Total Credit Hrs	16 or 17 Total Credit Hours	15 Total Credit Hours	6 Total Credit Hrs	15 Total Credit Hrs	16 Total Credit Hours	4 Total Credit Hrs	14 Total Credit Hours	16 Total Credit Hours

Total Credits for MCE Degree: 134 or 135 including ESC 130 Engineering Co-op Orientation

(Prerequisites) • (*Pre/co-requisite) • [# of Course Credits] • MCE XXX = Only Offered That Fall/Spring Semester

Required MCE Courses ** **ESC 130** is highly recommended, yet optional.
Required Science Courses
Required English Courses
Required Writing Across the Curriculum (WAC) Courses
Required MCE Electives **3 semesters of co-op can replace 1 elective
Required Math Courses
Core Curriculum Electives

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500-level courses that satisfy Undergraduate and Master's degree credits

☆ **ESC 120** Intro to Engineering Design can replace **INQ 170** for transfer students and students who completed an inquiry launch course other than INQ 170. Neither course is required for transfer students with Associate of Applied Science degree.

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Bachelor of MECHANICAL ENGINEERING (MCE)

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↓ **Scroll Down to View the Precalculus Entry 5-Year Plan Degree Chart** ↓

Click on the Course Name to access the course in the Undergraduate Catalog 24-25

Fall Semester 1	Spring Semester 2	Fall Semester 3	Spring Semester 4	Fall Semester 5	Spring Semester 6	Fall Semester 7	Spring Semester 8	Fall Semester 9	Spring Semester 10
★ INQ 170 [3] Inquiry Launch to Engineering	MCE 181 [2] CAE Lab II (MCE 180)	**ESC 130 [1] Engineering Co-op Orientation	MCE 276 [3] Materials & Man.Processes (MCE 181, *MCE 286)	ESC 201 [3] Statics (PHY 241)	ESC 211 [3] Strength of Materials (ESC 201)	MCE 362 [3] Machine Analysis (ESC 211, MCE 276)	MCE 324 [3] Intro to Heat Transfer (ESC 301, ESC 321)	MCE 450 [2] Design Project I (*MCE 365)	MCE 451 [3] Design Project II (MCE 450)
MCE 180 [2] CAE Lab I	Global Human Perspectives Elective [3]	ESC 152 [3] Programming with Matlab (MTH 168)	MCE 286 [1] Materials & Manufacturing Processes Lab (*MCE 276)	PHY 242 [5] Physics II (MTH 182, PHY 241)	MCE 260 [3] Kinematics (MTH 281, ESC 152)	ESC 321 [3] Thermodynamics (MTH 182)	MCE 315 [3] Electrical Systems (MCE 152, ESC 250 or MTH 286, PHY 242)	MCE 441 [3] or MCE 541 [4] Intro to Linear Controls (ESC 350 or MTH 288, MCE 371)	MCE 470 [3] Engineering Measurements (ESC 211, MCE 315, MCE 324, MCE 371, *MCE 480)
ENG 100 [3] Intensive Writing or ENG 101 [3] College Writing I	ENG 108 [3] AI & Writing (Preferred) (ENG 101) OR ENG 102 [3] College Writing II (ENG 101)	CHM 261 [3] Gen. Chem. I CHM 266 [1] Gen. Chem. I Lab (MTH 168)	PHY 241 [5] Physics I (MTH 181)	ESC 250 [3] Diff EQ for Eng. (MTH 182) OR MTH 286 [3] Intro. to Diff EQ (MTH 182- C or better)	ESC 350 [3] Linear Algebra for Engineers (MTH 182, ESC 152) OR MTH 288 [3] Linear Algebra (MTH 182- C or Better)	ESC 301 [3] Fluid Mechanics (ESC 250 or MTH 286)	MCE 421 [3] or MCE 521 [4] Applied Thermodynamics (ESC 321, *MCE 481)	MCE 365 [3] Machine Design I (MCE 362)	MCE 480 [1] Engineering Measurements Lab (*MCE 470)
Society and Human Behavior Elective [3]	American Civic Literacy Elective [3]	PHL 215 [3] Technology Ethics HCC Elective	MTH 182 [4] Calculus II (MTH 181- C or better)	MTH 281 [4] Multivariable Calculus (MTH 182- C or better)	ESC 202 [3] Dynamics (ESC 201)	MCE 371 [3] Vibrations (ESC 202, ESC 250 or MTH 286)	MCE 481 [1] Thermodynamics Lab (*MCE 421)	**MCE Lab [3 or 4] 400-500 Level Courses	ESC 282 [3] Engineering Economy (MTH 182)
MTH 165 [3] Intensive Precalc I OR MTH 167 [3] Precalculus I	MTH 168 [3] Precalculus II (MTH 165 or MTH 167- C or better)	MTH 181 [4] Calculus I (MTH 168- C or better)					Complexities of Pluralistic Society Elective [3]	**MCE Elective [3 or 4] 400-500 Level Courses	**MCE Elective [3 or 4] 400-500 Level Courses
14 Total Credit Hours	14 Total Credit Hours	14 or 15 Total Credit Hours	13 Total Credit Hours	15 Total Credit Hours	12 Total Credit Hours	12 Total Credit Hours	13 Total Credit Hours	14 Total Credit Hours	13 Total Credit Hours

Total Credits for MCE Degree: 134 or 135 including ESC 130 Engineering Co-op Orientation

(Prerequisites) • (*Pre/co-requisite) • [# of Course Credits] • MCE XXX = Only Offered That Fall/Spring Semester

Required MCE Courses ** **ESC 130** is highly recommended, yet optional.
Required Science Courses
Required English Courses
Required Writing Across the Curriculum (WAC) Courses

★**ESC 120** Intro to Engineering Design can replace **INQ 170** for transfer students and students who completed an inquiry launch course other than INQ 170. Neither course is required for transfer students with an Associates of Applied Science degree.

Required MCE Electives ****3 semesters of co-op can replace 1 elective**
Required Math Courses
Core Curriculum Electives

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C 500-level courses that satisfy Undergraduate and Master's degree credits

List of MCE undergraduate courses that satisfy Master's Degree credits

Course Number & Name
MCE 424/ MCE 524 : Applied Heat Transfer
MCE 430/ MCE 530 : Applied Fluid Mechanics
MCE 444/ MCE 544 : Applied Combustion Processes
MCE 445/MCE 545/EEC 510: Modern Controls
MCE 466/MCE 566 : Machine Design II
Several MCE 493/ MCE 593 Courses: Special Topics in MCE

Access CampusNet to check when courses are offered each semester.